U851RO

audio-technica

Omnidirectional Condenser Boundary Microphone

unipoint® microphones

Features

- **PivotPoint® rotating output connector allows cable to exit from either the rear or the bottom of the microphone**
- **Small-diameter UniPoint omnidirectional capsule near boundary eliminates phase distortion and delivers clear, high-output performance**
- **Superior off-axis rejection for maximum gain before feedback**
- **UniGuard® RFI-shielding technology offers outstanding rejection of radio frequency interference (RFI)**
- **Self-contained electronics eliminate need for external power module**
- **UniSteep® filter provides a steep low-frequency attenuation to improve sound pickup without affecting voice quality**
- **Available interchangeable elements permit angle of acceptance from 100° to 360°**
- **Heavy die-cast case and non-slip silicon foam bottom pads minimize coupling of surface vibration to the microphone**
- **Low-profile design with low-reflectance finish for minimum visibility**

U851RO Description

The U851RO is a wide-range condenser microphone with an omnidirectional polar pattern. It is designed for surface-mount applications such as high-quality sound reinforcement, conferencing, professional recording, television and other demanding sound pickup applications.

The microphone requires 11V to 52V phantom power for operation.

The microphone is equipped with UniGuard® RFI-shielding technology, which offers outstanding rejection of radio frequency interference (RFI).

The microphone's omnidirectional polar pattern provides a 360° angle of acceptance (omni in hemisphere above mounting surface). Additional interchangeable elements with cardioid (120°) and hypercardioid (100°) pickup patterns are available.

The microphone includes a 7.6 m (25') output cable terminating in special TA3F-type and XLRM-type connectors designed to optimize RFI immunity. The output of the microphone is a TB3M-type connector. The microphone is equipped with Audio-Technica's unique PivotPoint® rotating output connector.

A switch permits choice of flat response or low-frequency roll-off (via integral 80 Hz high-pass UniSteep® filter) to help control undesired ambient noise.

The microphone's heavy die-cast case and non-slip silicon foam bottom pads minimize coupling of surface vibration to the microphone. The microphone includes a soft protective pouch and features a low-reflectance black finish.

Installation and Operation

The U851RO requires 11V to 52V phantom power for operation.

Output is low impedance (Lo-Z) balanced. The signal appears across Pins 2 and 3; Pin 1 is ground (shield). Output phase is "Pin 2 hot"— positive acoustic pressure produces positive voltage at Pin 2.

The microphone should be placed on a flat, unobstructed mounting surface. The sound source should not be below the plane of the mounting surface.

An integral 80 Hz high-pass UniSteep® filter provides easy switching from a flat frequency response to a low-end roll-off. The roll-off position reduces the pickup of low-frequency ambient noise (such as traffic, air-handling systems, etc.), room reverberation and mechanically coupled vibrations. To engage the UniSteep® filter, slide the switch toward the "bent" line.

The microphone's PivotPoint® rotating output connector allows the cable to exit from either the rear or the bottom of the microphone without the need for tools or disassembly.

Avoid leaving the microphone in the open sun or in areas where temperatures exceed 110° F (43° C) for extended periods. Extremely high humidity should also be avoided.

Note: Audio-Technica has developed a special RFI-shielding mechanism, which is an integral part of the connectors in the UniPoint® line. If you remove or replace the connector, you may adversely affect the unit's RFI immunity. Audio-Technica offers a crimp tool (ATCT) and RFI shields that enable you to shorten the cable and correctly reinstall the connector while maintaining the highest level of RFI immunity.

Note: Placing any object on a surface (such as a conference table) before its finish is fully cured may result in damage to the finish.

Architect's and Engineer's Specifications

The microphone shall be a fixed-charge condenser designed for use in surface-mount applications. It shall have an omnidirectional polar pattern in the hemisphere above the mounting surface and a frequency response of 30 Hz to 20,000 Hz. It shall be capable of accepting optional interchangeable elements for additional polar patterns. The microphone shall operate from an external 11V to 52V DC phantom power source. It shall be capable of handling sound input levels up to 132 dB with a dynamic range of 111 dB. Nominal open-circuit output voltage shall be 28.2 mV at 1V, 1 Pascal. Output shall be low impedance balanced (200 ohms). It shall offer outstanding rejection of radio frequency interference (RFI).

The microphone shall incorporate self-contained electronics, eliminating the need for an external power module. A 7.6 m (25') miniature output cable with TA3F-type to XLRM-type connectors shall be supplied. The output of the microphone shall be a TB3M-type connector. The microphone shall include a switch to permit choice of flat response or 80 Hz low-frequency roll-off.

The microphone shall be equipped with an integral rotating output connector that allows the cable to exit from either the rear or the bottom of the microphone without the need to disassemble the microphone or use tools to change the cable exit location.

The microphone shall have a maximum width of 84.0 mm (3.31"), a maximum length of 108.0 mm (4.25") and a maximum height of 23.0 mm (0.91"). Weight shall be 262 grams (9.2 oz). The microphone shall be housed in a die-cast case with a perforated steel grille. Finish shall be low-reflectance black. The microphone shall include a soft protective pouch.

The Audio-Technica U851RO is specified.

Specifications

Element	Fixed-charge back plate, permanently polarized condenser
Polar pattern	Omnidirectional in hemisphere above mounting surface
Frequency response	30-20,000 Hz
Low frequency roll-off	80 Hz, 18 dB/octave
Open circuit sensitivity	–31 dB (28.2 mV) re 1V at 1 Pa
Impedance	200 ohms
Maximum input sound level	132 dB SPL, 1 kHz at 1% T.H.D.
Dynamic range (typical)	111 dB, 1 kHz at Max SPL
Signal-to-noise ratio[1]	73 dB, 1 kHz at 1 Pa
Phantom power requirements	11-52V DC, 4 mA typical
Switch	Flat, roll-off
Weight	262 g (9.2 oz)
Dimensions	108.0 mm (4.25") maximum length, 84.0 mm (3.31") maximum width, 23.0 mm (0.91") maximum height
Output connector	TB3M-type
Cable	7.6 m (25.0') long, 3.2 mm (0.13") diameter, 2-conductor, shielded cable with TA3F-type and XLRM-type connectors
Optional interchangeable elements	UE-C cardioid (120°) UE-H hypercardioid (100°)
Accessory furnished	Soft protective pouch

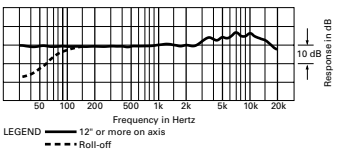
In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

1 Pascal = 10 dynes/cm^2 = 10 microbars = 94 dB SPL

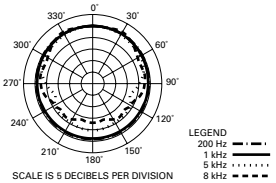
[1] Typical, A-weighted, using Audio Precision System One.

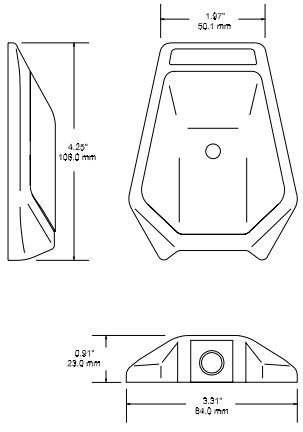
Specifications are subject to change without notice.

frequency response: 30–20,000 Hz



polar pattern





audio-technica

Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224
Audio-Technica Limited, Old Lane, Leeds LS11 8AG England
©2010 Audio-Technica U.S., Inc. audio-technica.com